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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/623,867 | 07/22/2003 | Jari Hulkkonen | 59643-00282 | 6401 |

32294 7590 11/03/2005

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EXAMINER

WIMER, MICHAEL C

ART UNIT PAPER NUMBER

2828

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,867

Applicant(s)

HULKKONEN ET AL.

Examiner

Michael C. Wimer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/11/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martek (6268828).

Regarding Claims 1,9-12 and 24-34 Martek shows an antenna arrangement, for example in Fig. 9, comprising at least two antennas for providing coverage to a plurality of mobile units (e.g., cellular phones within a cell system network) and having at least two different antennas 2x-1,2x-2 and 2x-3,2x-4, provided with a plurality of frequencies within the band of operation, providing two separate phase centers for each antenna, thus, defining "different antennas", where a different beam-tilt is provided (see col. 16, lines 41-50), the adjusting means 530a (col. 16, lines 51-62) provides for dynamically adjusting transmission properties of the lower antenna. It would have been obvious to the skilled artisan that the lower antenna provides for distribution of users within the area covered by the beam therefrom, particularly since separate and different phase centers are associated with each respective antenna array.

The use of allocating means, dynamically as claimed, is provided by allocating at least one user equipment to the group of users in the area noted above (i.e., the

beam with the most beam tilt). A skilled artisan would have found it obvious that allocating means comprises the network disclosed by Martek, where an individual cellular phone is allocated a frequency pair, has an identification within the network and thus utilizes the particular beam (either one having varying degrees of beam-tilt). Such a condition derives a dynamically adjusted transmission property for a particular antenna array.

Regarding Claims 2 and 4, the antennas, frequency pairs/groups and groups of users are associated with particular beams and frequencies. A skilled artisan would have found it obvious that these conditions obtain in order for the network to handle all calls associated with the radio units. Regarding Claims 3,5-8 and 13-23, a skilled artisan would have found it obvious that the users are associated with respective layers, corresponding to the beams, and their frequency pairs associated with their groups of users within respective cells.

Response to Arguments

3. Applicant's arguments filed 8/10/2005 have been fully considered but they are not persuasive. Specifically, the arrays in Martek are divided by radiation properties and connection to the circuitry. The arrays that provide two separate and distinct phase centers define two antennas, as claimed. The structure is shown in Martek that provides the functions recited in the present claims. Providing two separate arrays of antenna elements, i.e., upper and lower arrays, having distinctive phase centers certainly qualifies as two antennas. Martek teaches at column 16, third paragraph, that the two phase centers are utilized to provide elevation steering. The fourth paragraph in

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column 16 provides the skilled artisan with the suggestion of adjusting, dynamically, the electrical down-tilt, as claimed. A skilled artisan would have found it obvious to divide the arrays, having separate phase centers, in order to dynamically steer the respective beams to the respective users. Since all structure has been shown and evidence of obviousness has been set forth, the rejection stands.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

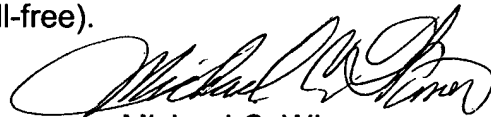
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on (571) 272-1835. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Michael C. Wimer", is positioned above the printed name.

Michael C. Wimer
Primary Examiner
Art Unit 2828

MCW
10/25/2005